<R42-337-0>

SERVICE MANUAL

SA-5200

KU, KC, FV

NOTE:

MODEL SA-5200 COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Round label on rear panel	Voltage	Type
KU	120V only	UL approved (U.S.A.)
KC	120V only	CSA approved (Canada)
FV	5-position selector	General export model

<73C01E91D>

PIONEER®

CONTENTS

1. SPECIFICATIONS 3
2. FRONT PANEL FACILITIES 5
3. CONNECTION DIAGRAM 7
4. BLOCK DIAGRAM 9
5. CIRCUIT DESCRIPTION
   5.1 Equalizer Amp 11
   5.2 Control Amp 11
   5.3 Power Amp 11
   5.4 Power Supply 11
6. LEVEL DIAGRAM 12
7. DISASSEMBLY 13
8. PARTS LOCATION 14
9. IDLE CURRENT ADJUSTMENT 15
10. PACKING METHOD AND PART NUMBERS 16
11. WIRING DIAGRAM 17
12. EXPLODED VIEW AND PARTS LIST 19
13. SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST
   13.1 Circuit Connection Diagram and Miscellaneous Parts 23
   13.2 Equalizer Amplifier Assembly (AWF-008) 26
   13.3 Control Amplifier Assembly (AWG-021) 30
   13.4 Power Amplifier Assembly (AWH-019) 33
   13.5 Power Supply Circuit Assembly (AWR-034) 37
   13.6 Switch Circuit-A Assembly (AWS-046) 39
   13.7 Switch Circuit-B Assembly (AWS-047) 40

1. SPECIFICATIONS

SEMICONDUCTORS

Transistors 22
Diodes 7

POWER AMPLIFIER SECTION

Circuitry . . . . . 1st Stage Differential Amplifier, Direct Coupled Quasi-complementary.
Continuous Power Output
20Hz~20kHz
(Both channels driven) 10W+10W (8Ω)
1kHz
(Both channels driven) 13W+13W (8Ω), 15W+15W (4Ω)
1kHz
(Each channel driven) 16W/16W (8Ω), 20W/20W (4Ω)
Harmonic Distortion
(Continuous Power Output). . . . . Less than 0.8%
(1W+1W Power Output). . . . . Less than 0.2%
Intermodulation Distortion
(Continuous Power Output). . . . . Less than 0.8%
(1W+1W Power Output). . . . . Less than 0.4%
Power Bandwidth (IHF, Both channels driven). . 10Hz~40kHz (H.D. 0.8%)
Output, Speaker . . . . . A, B, A+B (4~16Ω)
Headphones . . . 4~16Ω
Damping Factor
(1kHz, 8Ω). . . . . More than 30
Residual Hum & Noise (8Ω, Pre & Power-amplifier) . . . . . Less than 1mV (0.13μW)

PREAMPLIFIER SECTION

Circuitry
Equalizer-amplifier . . 2-stage Direct Coupled NFB type
Control-amplifier . . . CR type
Input Sensitivity/Impedance
PHONO. 2.5mV/50kΩ
PHONO Overload Level
(rms/p-p) 100mV/280mV
TUNER. 150mV/100kΩ
AUX 1 . . . . . 150mV/100kΩ
AUX 2 . . . . . 150mV/100kΩ
TAPE MONITOR . . . 150mV/100kΩ
TAPE REC/PB
(DIN connector) 150mV/100kΩ
Output Level/Impedance
TAPE REC 150mV
TAPE REC/PB
(DIN connector) 30mV/80kΩ
Frequency Response
PHONO
(RIAA equalization) . 30Hz~ 15kHz ±0.5dB
TUNER, AUX, TAPE
MON . . . . . 15Hz~30kHz ± 1dB
Tone Control
BASS . . . . . +12dB, −10dB (100Hz)
TREBLE . . . . . +9.5dB, −10.5dB (10kHz)
Loudness Contour (Volume control set at −40dB position) . . . +10dB (100Hz), +6dB (10kHz)
Hum & Noise (IHF, Short-circuited, A Network)
PHONO . . . . . More than 70dB
TUNER, AUX, TAPE
MON . . . . . More than 90dB

MISCELLANEOUS

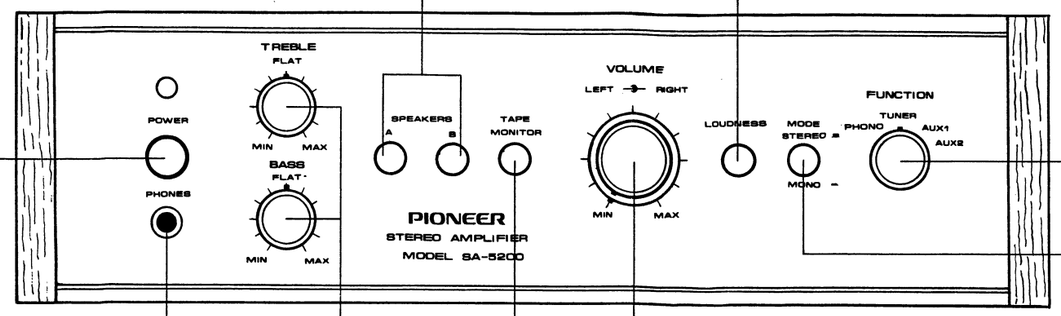
Power Requirements . . . AC 120V 60Hz or AC 110V, 120V, 130V, 220V and 240V 50/60Hz (Switchable)
Power Consumption
(Max.) 85W
AC Outlets . . . . . Switched 1, Unswitched 1
Dimensions (overall) . . . 415(W) x 132(H) x 328(D) mm
16-5/16 x 5-3/16 x 12-15/16 in.
Weight Without Package 7.2kg (15lb 13oz)
With Package . . 8.5kg (18lb 11oz)

FURNISHED PARTS

Connection Cord with Pin Plugs 1
Polishing Cloth 1
Operating Instructions 1
Fuse 0.5A (5-line voltage model only) 1
Fuses 1A (5-line voltage model only) 2

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.

2. FRONT PANEL FACILITIES



POWER SWITCH

Push once to switch the power on, once again to switch it off.

HEADPHONE JACK

Stereo headphones can be plugged into this jack. A wide variety of quality headphones is available from Pioneer.

TREBLE & BASS CONTROLS

Control treble and bass. Turning each control clockwise from the FLAT position will boost the tone, and turning it counterclockwise will diminish the tone.

VOLUME CONTROL

The volume increases (decreases) when this dual-concentric control is turned clockwise (counterclockwise).
Both parts of the knob usually rotate together. To adjust the volume of either the right or left channel alone, hold one part of the control knob with one hand and turn the other with the other hand. Convenient in balancing the volume of both channels. The front knob is for the left channel, the rear one for the right.

TAPE MONITOR SWITCH

This switch is pushed for test-listening of recording in progress or playback of recorded tapes with tape decks, when the tape deck is connected to the TAPE MON and TAPE REC jacks, or to the REC/PB connector.
For all other listening modes (records, radio, etc.) this switch must remain off. Otherwise, no sound will be heard.

SPEAKERS SWITCHES

Select the speaker systems (A) and (B). Push A or B according to speaker systems.

A: Speaker systems connected to speaker outputs A operate.

B: Speaker systems connected to speaker outputs B operate.

If both A and B are pushed simultaneously, sounds will be heard through both speaker systems (A) and (B).
Push the switches once again to stop sounds.

LOUDNESS SWITCH

Push this switch to obtain a more natural sound contour at low volume level. Human hearing fails to register very low and very high notes when the overall listening volume is low. The loudness circuit compensates for this handicap by boosting the very low and very high parts of the sound spectrum.

FUNCTION SWITCH

This switch is used for choosing the program source.

PHONO: For playing records on a turntable connected to the PHONO jacks.

TUNER: For listening to broadcasts through the tuner.

AUX 1: For playing signals fed to the AUX 1 jacks.

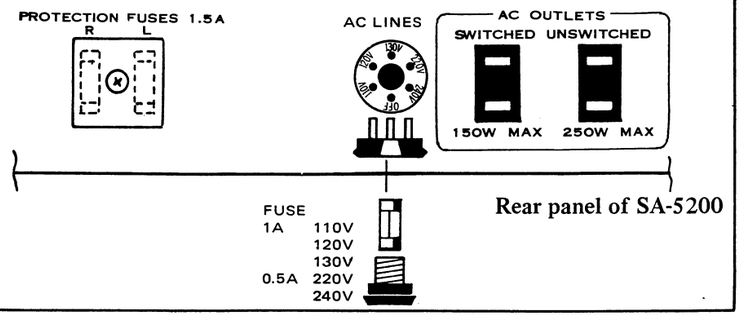
AUX 2: Same as above, for AUX 2 jacks.

MODE SWITCH

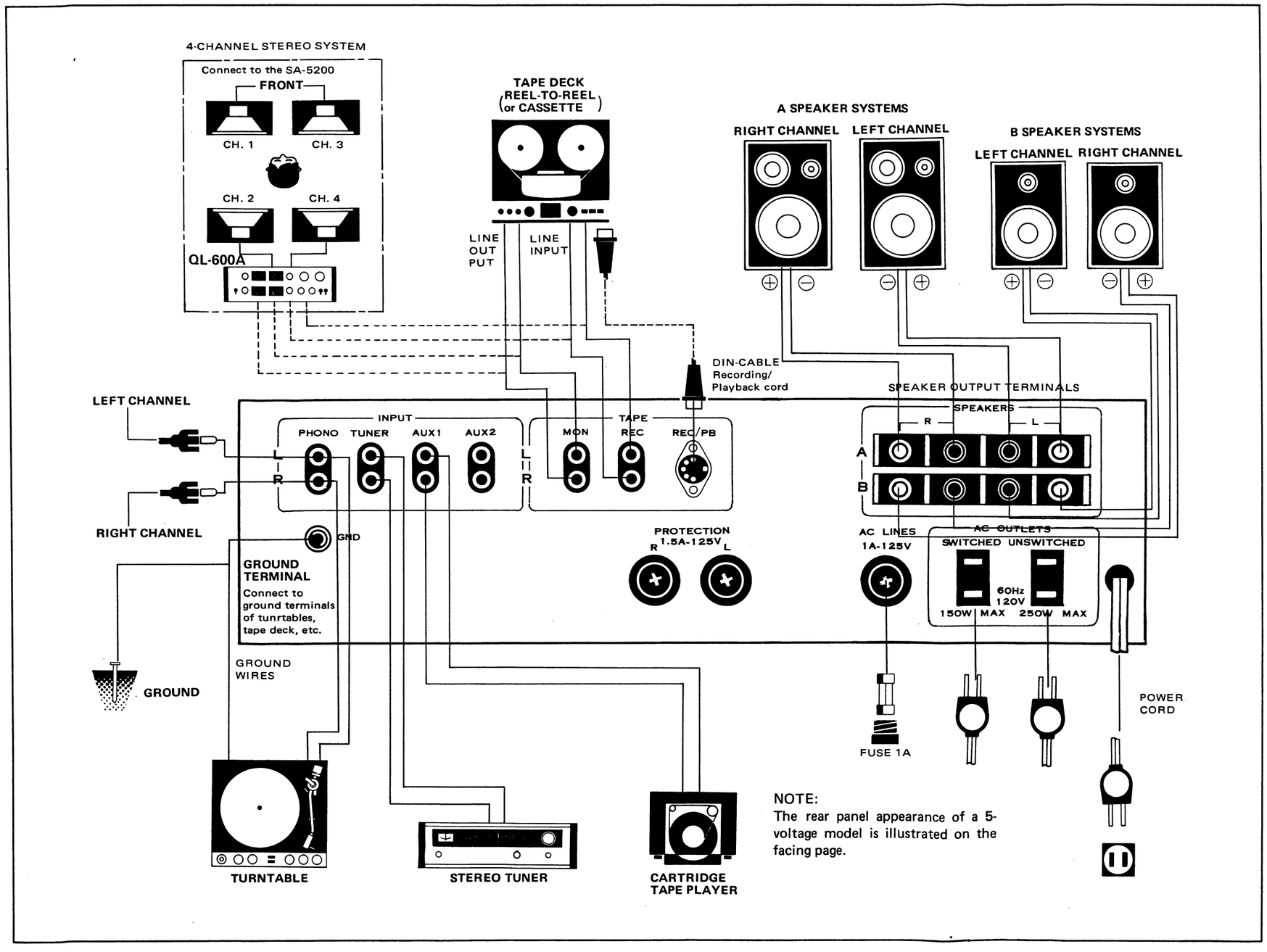
STEREO: When set to STEREO, stereo sound is present.

MONO: When set to MONO, the left and right channel signals are blended to reproduce monophonic sound.

5-line voltage model's rear appearance different from that of 120V model looks like this:

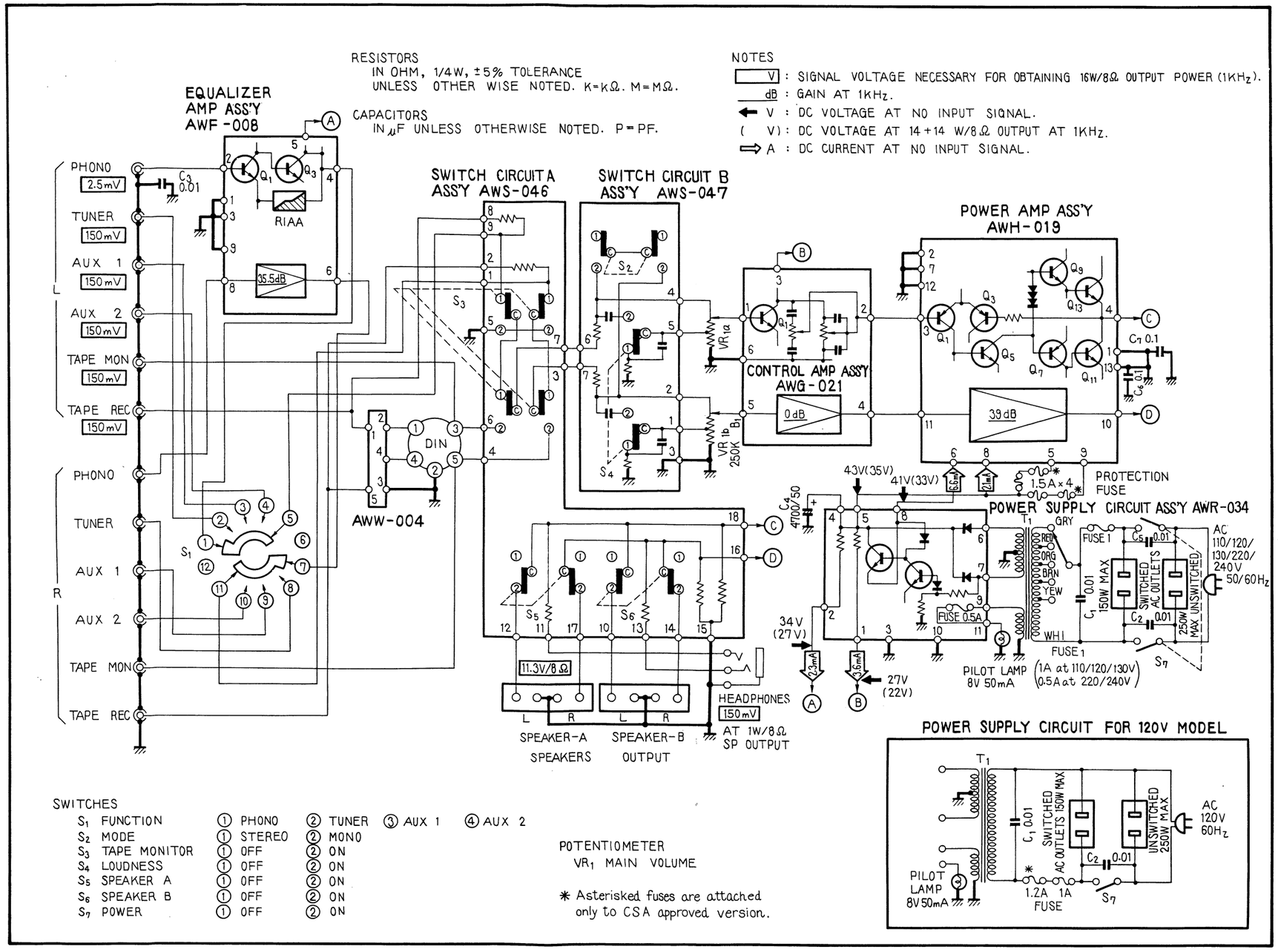


3. CONNECTION DIAGRAM



NOTE:
The rear panel appearance of a 5-voltage model is illustrated on the facing page.

4. BLOCK DIAGRAM



5. CIRCUIT DESCRIPTION

5.1 Equalizer Amp

The signal from the PHONO input terminal is fed to the input terminals of the equalizer amplifier stage, which employs a two-stage direct coupled circuit.
Since sufficient negative feedback from the second-stage collector is fed to the first-stage emitter, characteristics accurate to within ±0.5 dB on the RIAA curve can be provided. Compared with previous two-stage direct coupled circuits, this system makes for greater stability in the bass range and provides a surplus dynamic margin.
The amplified signal from the second-stage collector is fed to switch circuit-A ass'y through the FUNCTION switch.

5.2 Control Amp

The signal selected by the FUNCTION switch is fed to the control amplifier through the TAPE MONITOR switch in switch circuit-A ass'y, the loudness compensator circuit in switch circuit-B ass'y, and a potentiometer. The TONE CONTROL circuit employs the nominal CR type configuration, and is connected after the one-stage amplifier. As in the BASS and TREBLE tone controls, click-stop volume controls are employed, which provide high accuracy for flat frequency characteristics at the middle point of control knobs. The output of the control amplifier is fed directly to the power amplifier.

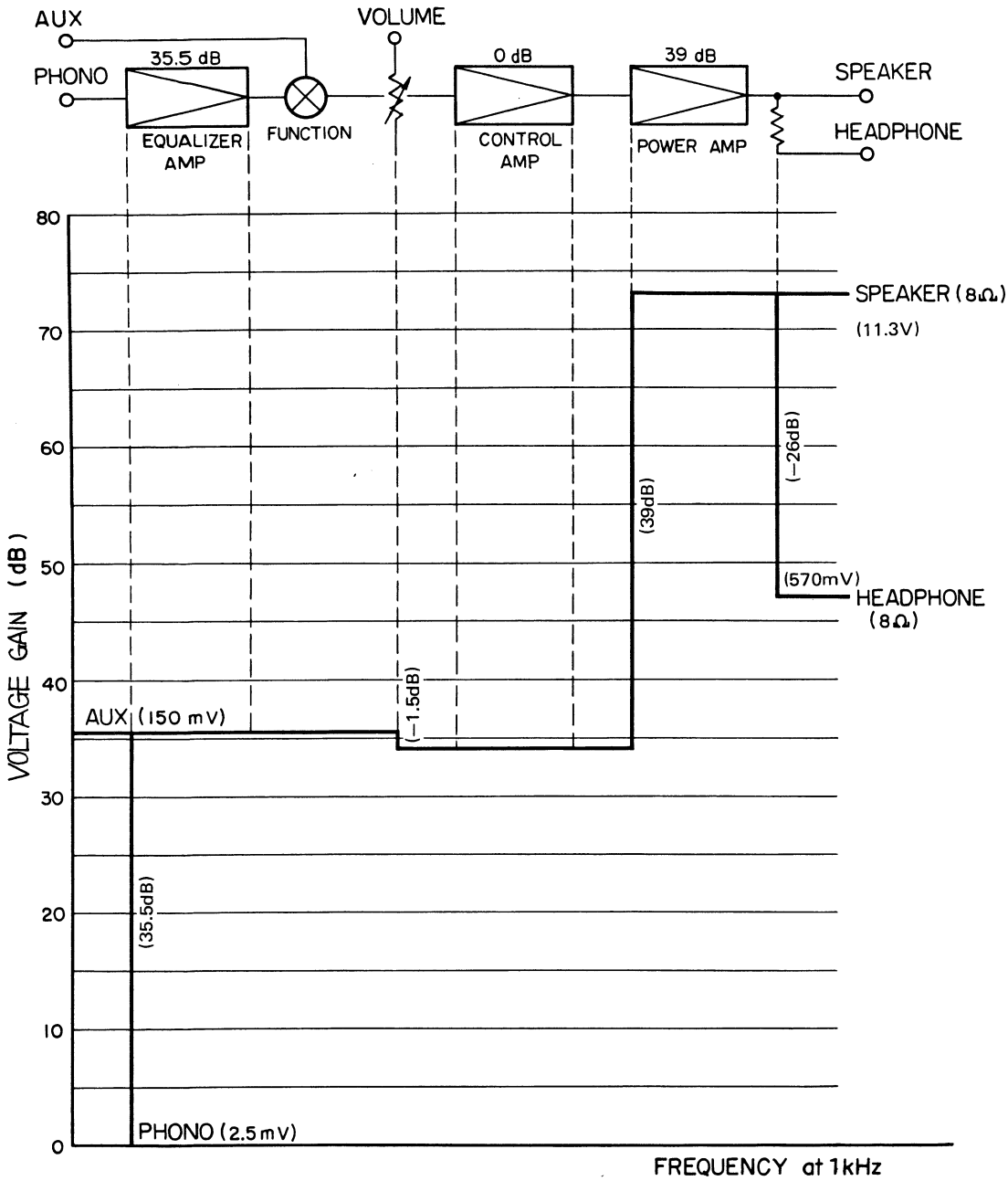
5.3 Power Amp

The power amplifier stage consists of seven transistors for each channel. It is composed of the thruout direct coupled circuit with differential amplifier.
The signal from the control amplifier ass'y is fed to one base in the differential amplifier. The AC and DC negative feedback from the output junction is fed to another base in the differential amplifier so that overall stability is improved.
The differential amplifier output connects directly with the pre-driver base and amplifier. The signal from the pre-driver is amplified by the driver and the power output stage, and fed to the speaker terminals through the SPEAKER switch in switch circuit-A ass'y.
Temperature compensation in the power amp ass'y is accomplished by a three-element varistor and the idle current adjustment by a semi-fixed variable resistor connected in series to the varistor.
Power transistor protection is accomplished by the fuse installed in series at the B-power circuit.

5.4 Power Supply

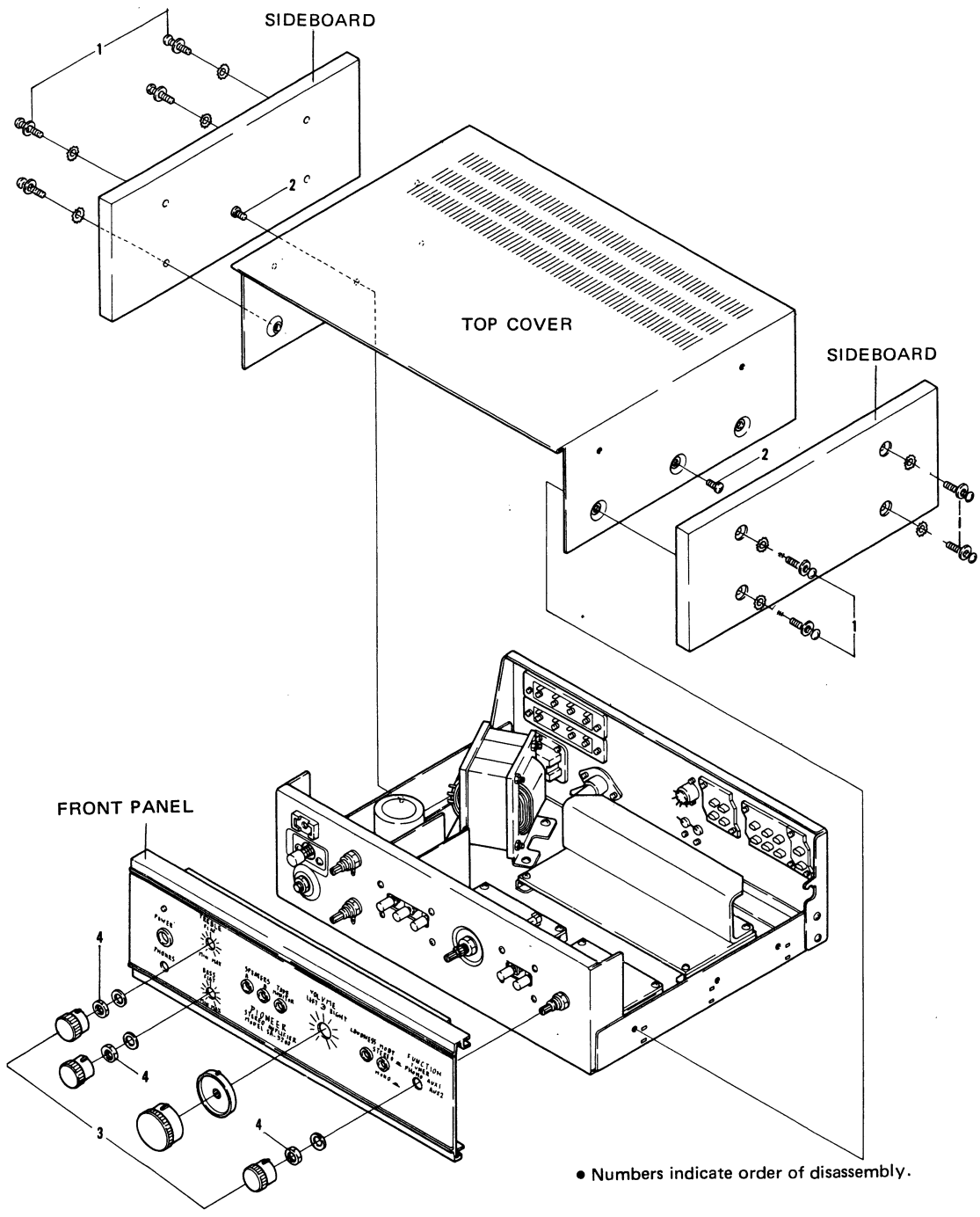
A full-wave rectifier circuits supply all DC power. The rectified DC, with the ripple component eliminated by means of a 4,700μF capacitor, is supplied for the output circuitry of the power amplifier circuit, and through CR filters for the other stages. The muting circuit eliminates the unpleasant noise usually heard when the power switch is turned ON or OFF. When the power switch is turned on, the first-stage transistor Q1 in the power supply circuit is cut off immediately by the reverse bias caused by a diode associated with the base.
When the power switch is turned off, the negative bias which has kept the first-stage transistor cut off is turned over to positive bias, and current entering the driver-stage in the power Since the saturate of the first-stage transistor makes the second-stage transistor base connect to ground, the transistor cuts off the bias current entering the driver-stage in the power amplifier ass'y. Thus the amplifier stops working and unpleasant noise is eliminated.
A diode connected between the base and the emitter of the second-stage transistor permits discharge of the current charge in the power amplifier ass'y when the second-stage transistor is cut off (when the power switch is turned off).

6. LEVEL DIAGRAM



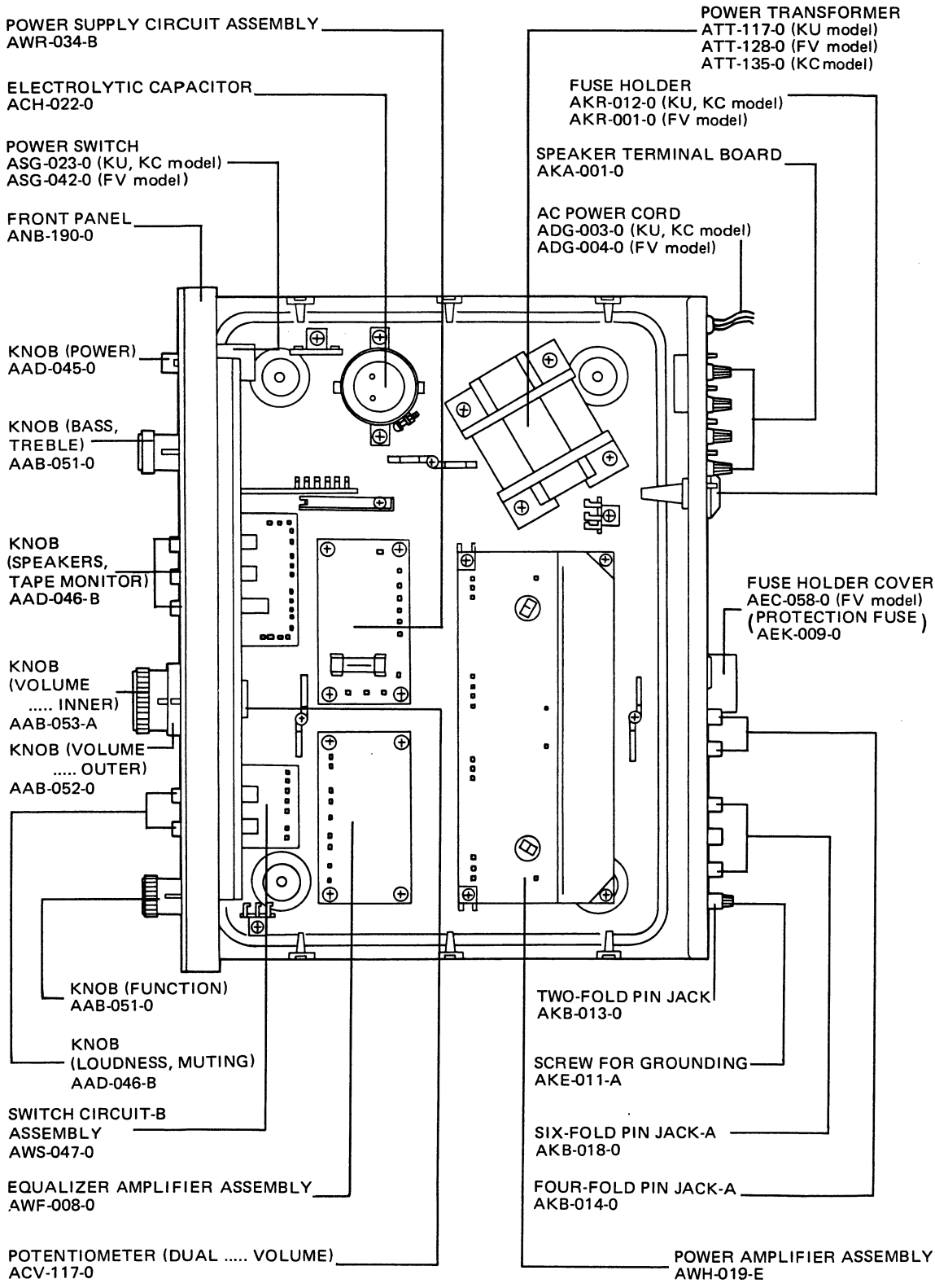
7. DISASSEMBLY

1. Unscrew the four screws which fasten the sideboards on both sides of the top cover.
2. Remove the top cover after unscrewing the two screws on each side of the top cover.
3. Remove all knobs except the push-button.
4. Unscrew the hexagonal nuts which fasten the shafts of FUNCTION, BASS, and TREBLE.
   Remove the front panel.



• Numbers indicate order of disassembly.

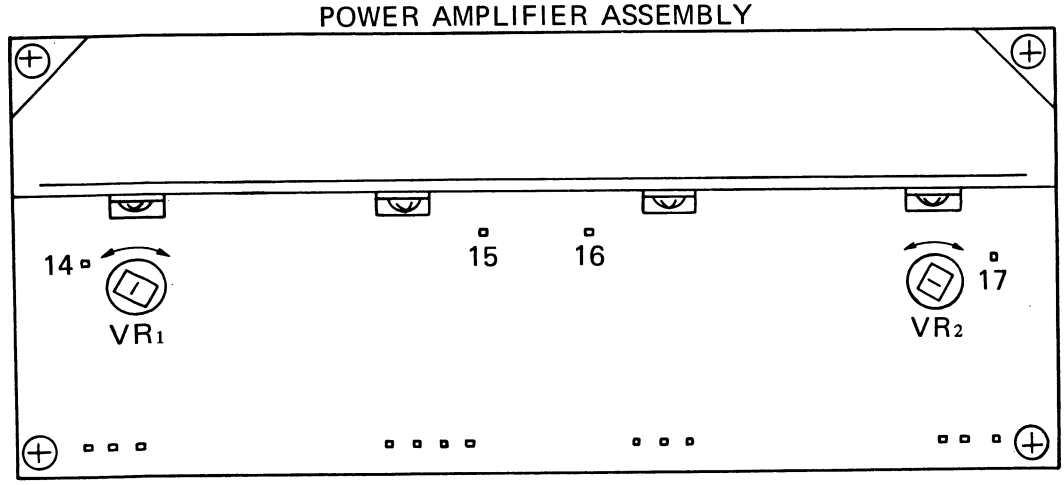
8. PARTS LOCATION



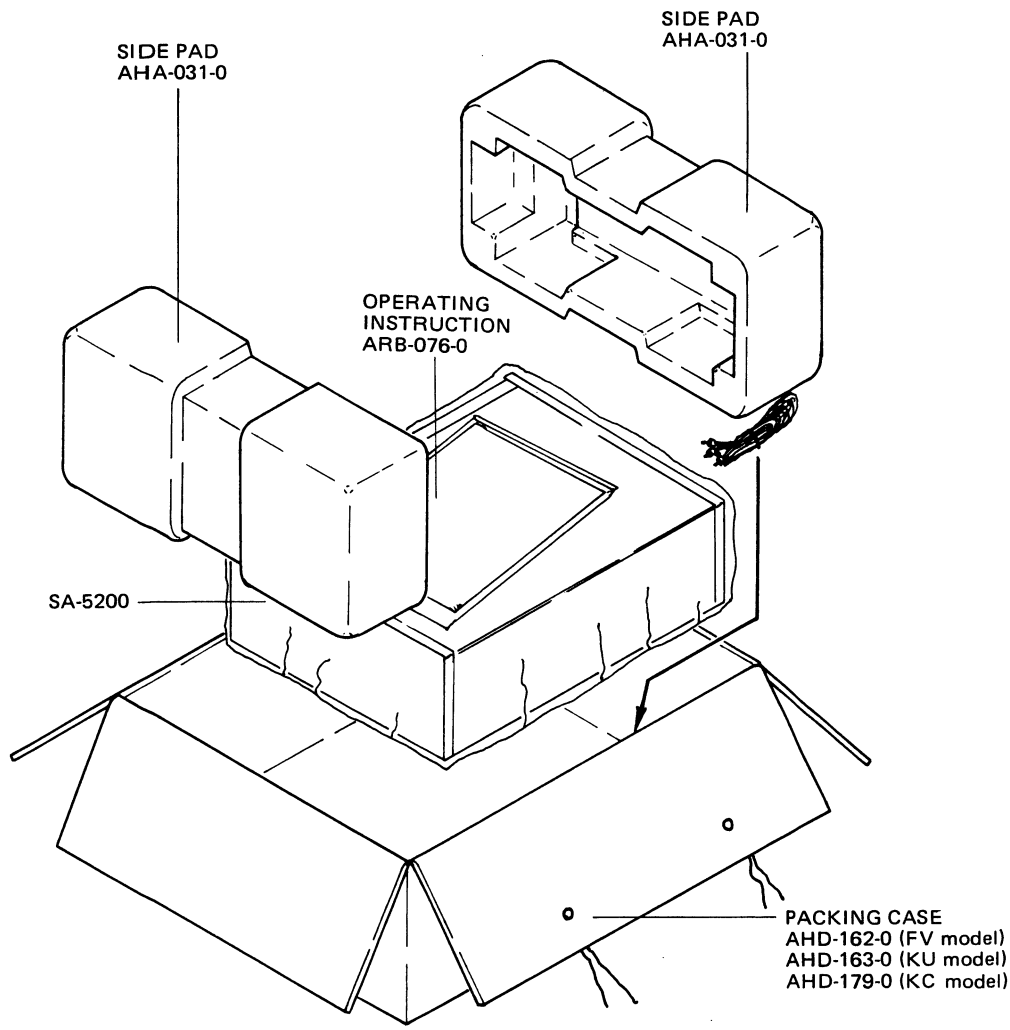
9. IDLE CURRENT ADJUSTMENT

1. Remove the top cover. (Refer to page 13.)
2. Connect 8Ω non-inductive resistor to the speaker terminals without connecting the input.
3. Turn on the power and check that the proper voltage is being fed to the individual circuit boards.
   (For the voltage, refer to page 23)
4. Leave the power on for ten minutes, then connect the voltmeter between terminals 14 and 15 of the power amplifier ass'y. Adjust VR1 so that the voltmeter reads 30mV.
5. Adjust VR2 so that the voltmeter reads the voltage between 16 and 17 of the power amplifier ass'y 30mV.
6. After adjustment, disconnect 8Ω resistor from the speaker terminals.
   Reassemble the top cover and the sideboards.

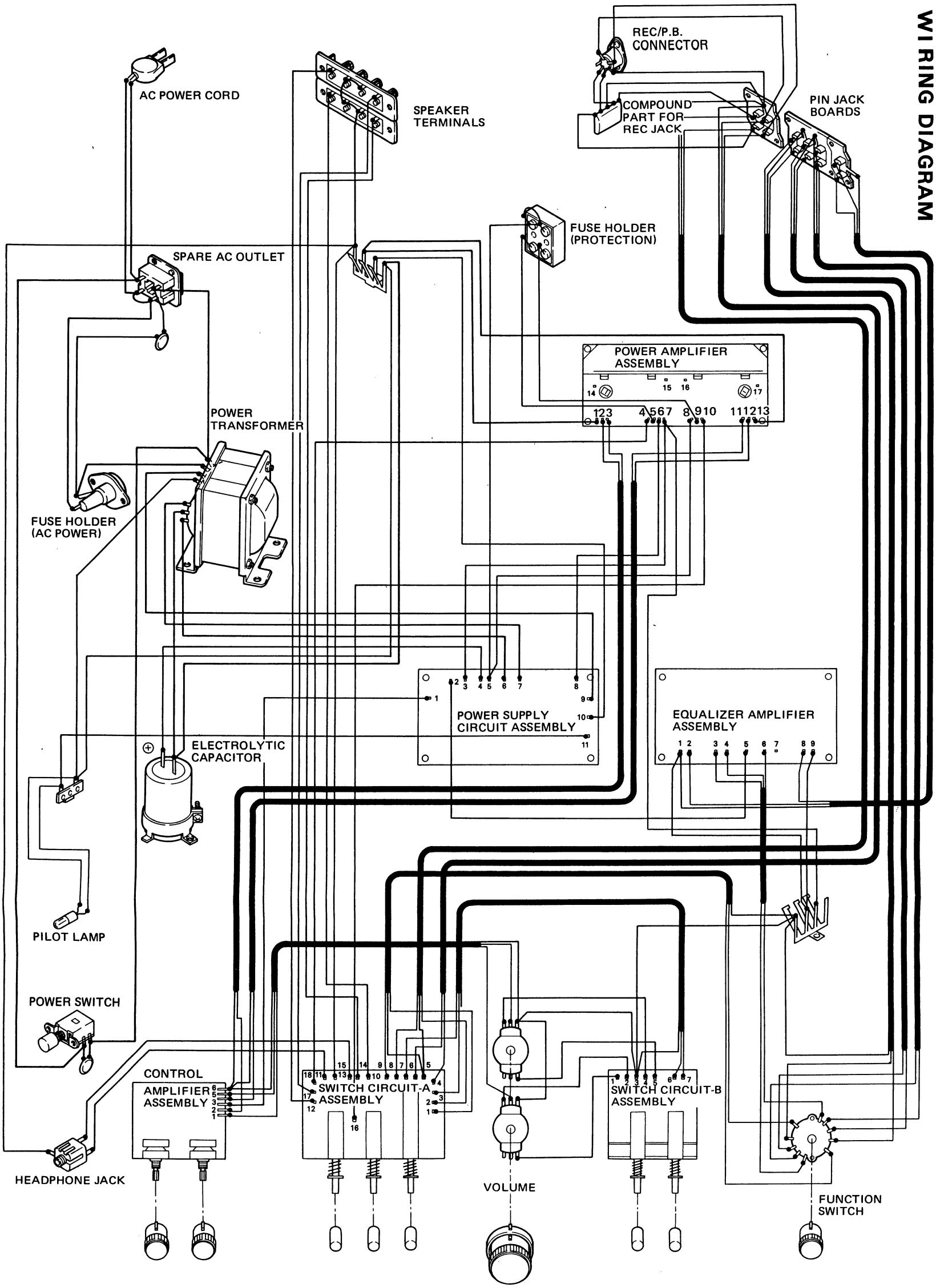
POWER AMPLIFIER ASSEMBLY



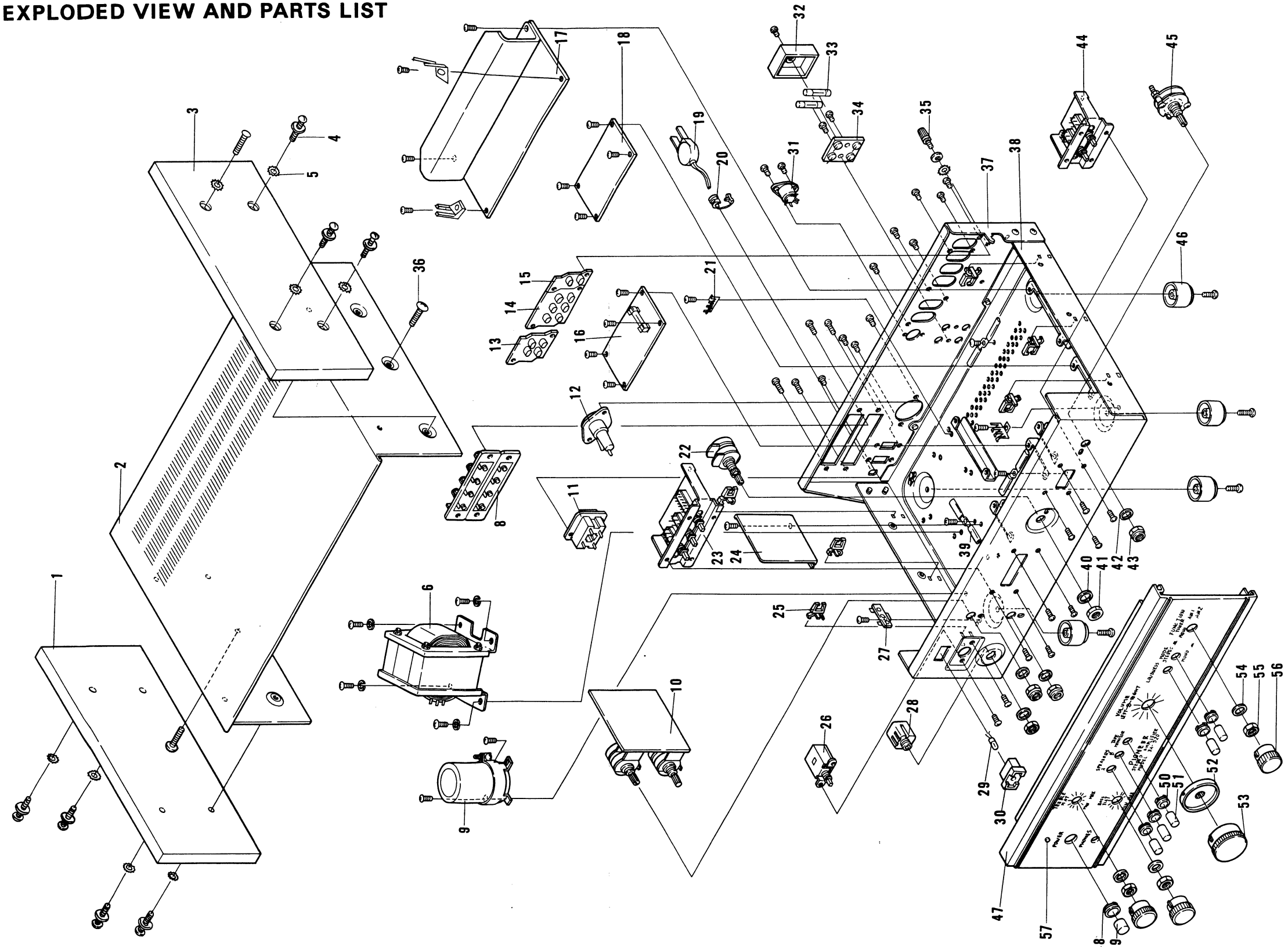
10. PACKING METHOD AND PART NUMBERS



11. WIRING DIAGRAM


AC POWER CORD
SPEAKER TERMINALS
REC/P.B. CONNECTOR
COMPOUND PART FOR REC JACK
PIN JACK BOARDS
FUSE HOLDER (PROTECTION)
SPARE AC OUTLET
POWER AMPLIFIER ASSEMBLY
14 15 16 17
1 2 3 4 5 6 7 8 9 10 11 12 13
POWER TRANSFORMER
FUSE HOLDER (AC POWER)
POWER SUPPLY CIRCUIT ASSEMBLY
1 2 3 4 5 6 7 8 9 10 11
EQUALIZER AMPLIFIER ASSEMBLY
1 2 3 4 5 6 7 8 9
ELECTROLYTIC CAPACITOR
PILOT LAMP
POWER SWITCH
CONTROL AMPLIFIER ASSEMBLY
1 2 3 4 5 6
SWITCH CIRCUIT-A ASSEMBLY
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
SWITCH CIRCUIT-B ASSEMBLY
1 2 3 4 5 6 7
VOLUME
FUNCTION SWITCH
HEADPHONE JACK

12. EXPLODED VIEW AND PARTS LIST



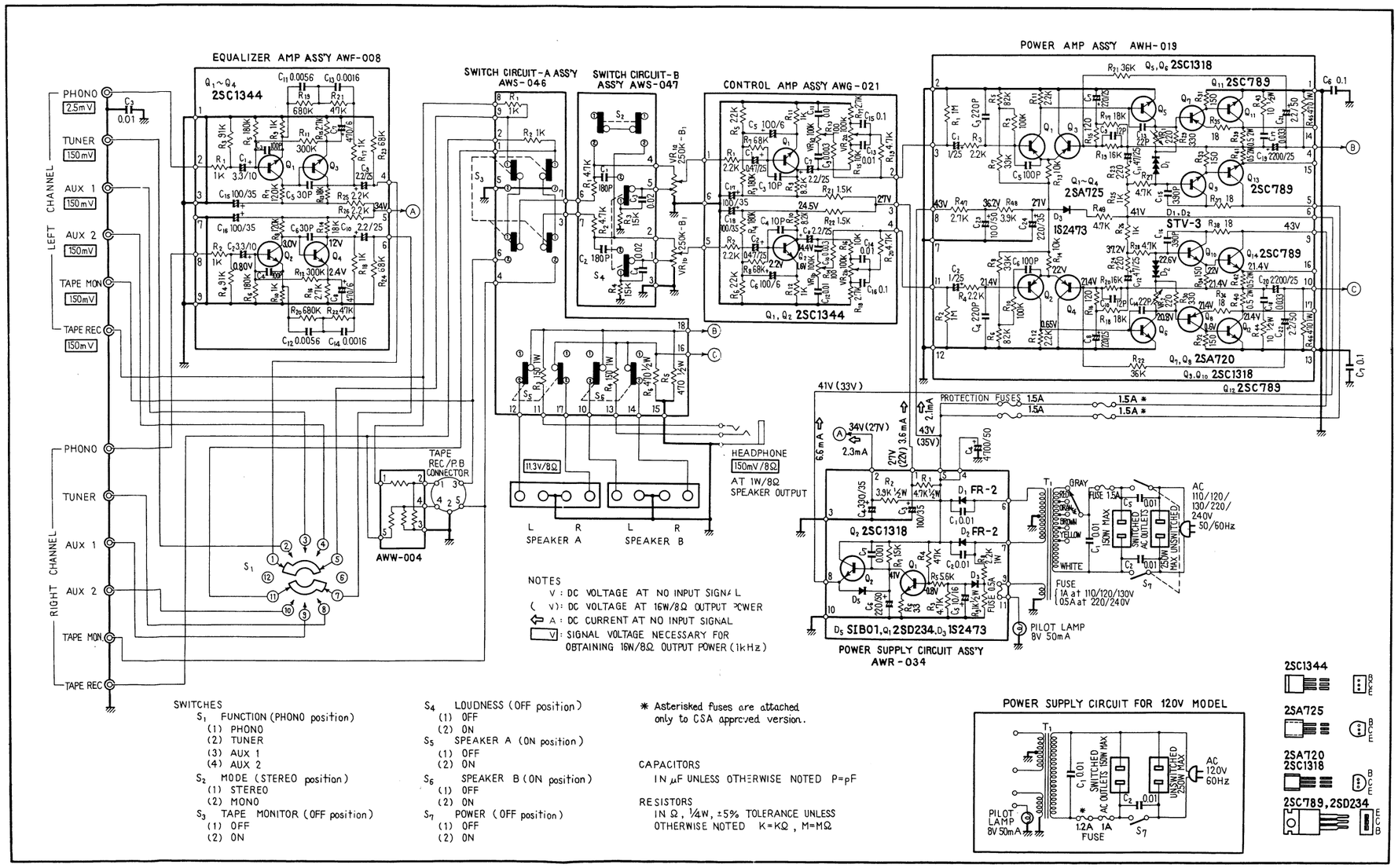
NOTICE:
Any parts asterisked are subject to being not supplied.

Key No.	Description	Part No.	
1	Side board-L	AMS-003-A	
2	Metal cover	ANE-024-0	
3	Side board-R	AMS-004-A	
4	Sideboard fixing screw	ABA-013-0	
5	Washer	B21-011-0	
6	Power transformer	ATT-127-0	KU model
	Power transformer	ATT-128-0	FV model
	Power transformer	ATT-135-0	KC model
7			
8	Speaker terminal board	AKA-001-0	
9	Electrolytic capacitor 4,700μF 50V	ACH-022-0	
10	Control amplifier assembly	AWG-021-0	
11	Spare AC outlet	AKP-002-0	KU, KC model
	Spare AC outlet (Dual)	AKP-004-0	FV model
12	Fuse holder (AC power)	AKR-012-0	KU, KC model
	Fuse holder (AC power)	AKR-001-0	FV model
13	Four-fold pin jack-A	AKB-014-0	
14	Six-fold pin jack-A	AKB-018-0	
15	Two-fold pin jack	AKB-013-0	
16	Power supply circuit assembly	AWR-034-B	
17	Power amplifier assembly	AWH-019-E	
18	Equalizer amplifier assembly	AWF-008-0	
19	AC power cord	ADG-003-0	KU, KC model
	AC power cord	ADG-004-0	FV model
20	AC cord stopper	AEC-079-0	
21	4P strip lug terminal	K13-047-0	
22	Volume control(250k-B_1)	ACV-117-0	
23	Switch circuit-A assembly	AWS-046-0	
24*	Shield plate	ANH-147-0	
25*	Wire clip-S	AEC-037-0	
26	Power switch (push-button type)	ASG-023-0	KU,KC model
	Power switch (push-button type)	ASG-042-0	FV model
27	1L2P strip lug terminal	AKC-015-0	
28	Headphone jack	K72-026-0	
29	Pilot lamp (power indicator)	AEL-007-0	
30	Grommet (rubber)	AEB-034-0	
31	5P connector socket (DIN-type)	K93-003-B	
32	Fuse holder (protection) cover	AEC-058-0	FV model
33	Fuse 1.5A (protection)	AEK-009-0	
34	Fuse holder (protection)	AKR-012-0	KU, KC model
	Fuse holder (protection)	AKR-011-0	FV model
35	Screw for grounding	AKE-011-A	

Key No.	Description	Part No.	
36	Metal cover fixing screw	B11-034-0	
37*	Rear panel	ANC-079-0	
38*	Chassis	ANA-042-A	
39*	Wire clamper	M46-027-0	
40	Washer (11φ)	B22-009-0	
41	Nut (11φ)	B71-005-0	
42	Washer	B22-016-0	
43	Special nut	ALA-006-A	
44	Switch circuit-B assembly	AWS-047-0	
45	Function switch (rotary type)	ASB-029-A	
46	Foot	AEC-061-A	
47	Front panel	ANB-191-0	
48	Spacer (A)	AEC-095-0	
49	Knob (POWER)	AAD-045-0	
50	Spacer (B)	AEC-096-0	
51	Knob (SPEAKERS, MODE, TAPE MON., LOUDNESS)	AAD-046-B	
52	Knob (VOLUME ..... outer)	AAB-052-0	
53	Knob (VOLUME ..... inner)	AAB-053-A	
54	Washer	B22-016-0	
55	Nut (9φ)	B71-004-0	
56	Knob (FUNCTION, BASS, TREBLE)	AAB-051-0	
57	Lens (power indicator)	AEC-097-A	

13. SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LISTS

13.1 CIRCUIT CONNECTION DIAGRAM AND MISCELLANEOUS PARTS



Miscellaneous Parts List

- CAPACITORS: IN μF UNLESS OTHERWISE NOTED p:pF
- RESISTORS: IN Ω, ¼W UNLESS OTHERWISE NOTED k:kΩ M:MΩ

CAPACITORS

Symbol	Description			Part No.	
C1	Metallized mylar	0.01	800V	ACE-002-0	KU model
	Ceramic	0.01	150V	ACG-003-0	KC model
	Ceramic	0.01	DC 1.4kV	C43-003-0	FV model
C2	Ceramic	0.01	150V	ACG-002-0	KU, KC model
	Ceramic	0.01	DC 1.4kV	C43-003-0	FV model
C3	Ceramic	0.01	50V	CKDYF 103Z 50	
C4	Electrolytic	4,700	50V	ACH-022-0	
CF	Ceramic	0.01	DC1.4kV	C43-003-0	FV model
C6	Mylar	0.1	50V	CQMA 104K 50	
C7	Mylar	0.1	50V	CQMA 104K 50	

POTENTIOMETER

Symbol	Description	Part No.	
VR1	Volume control (250k-B1)	ACV-117-0	

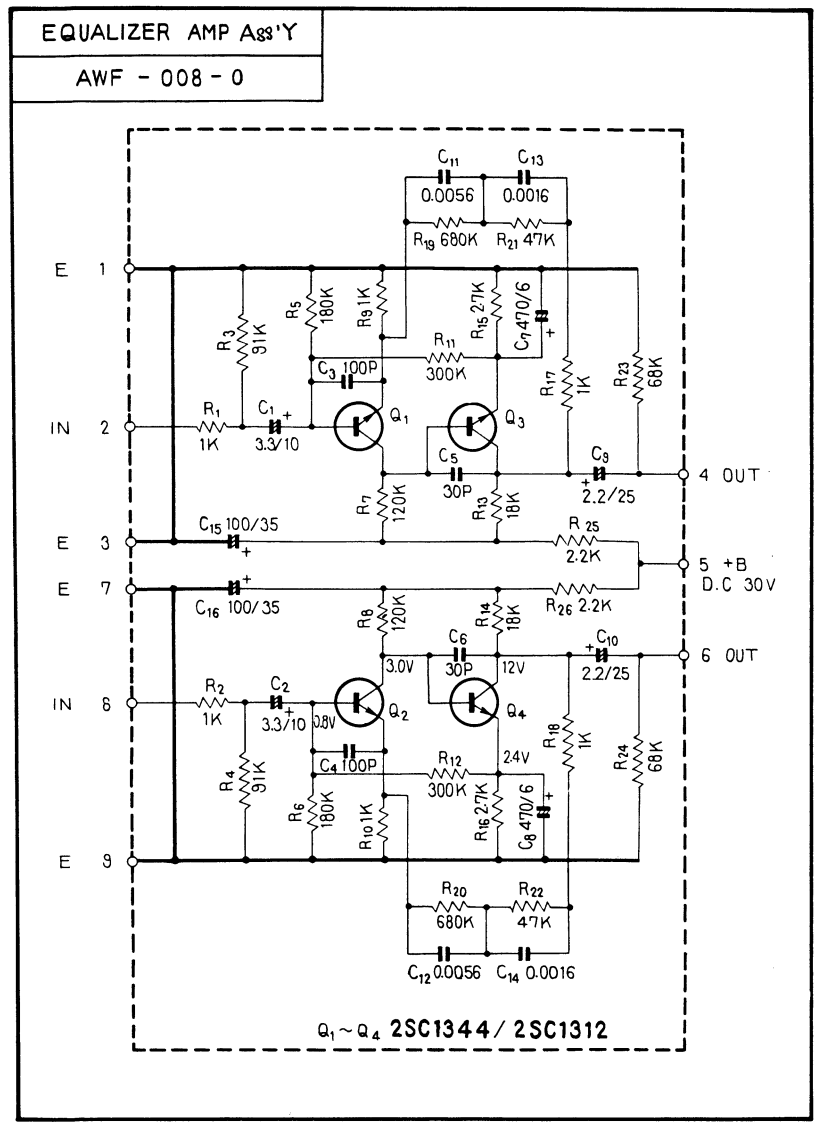
SWITCHES

Symbol	Description	Part No.	
S1	Function (Rotary type)	ASB-029-A	
S7	Power (Push-button type)	ASG-023-0	KU, KC model
	Power (Push-button type)	ASG-042-0	FV model

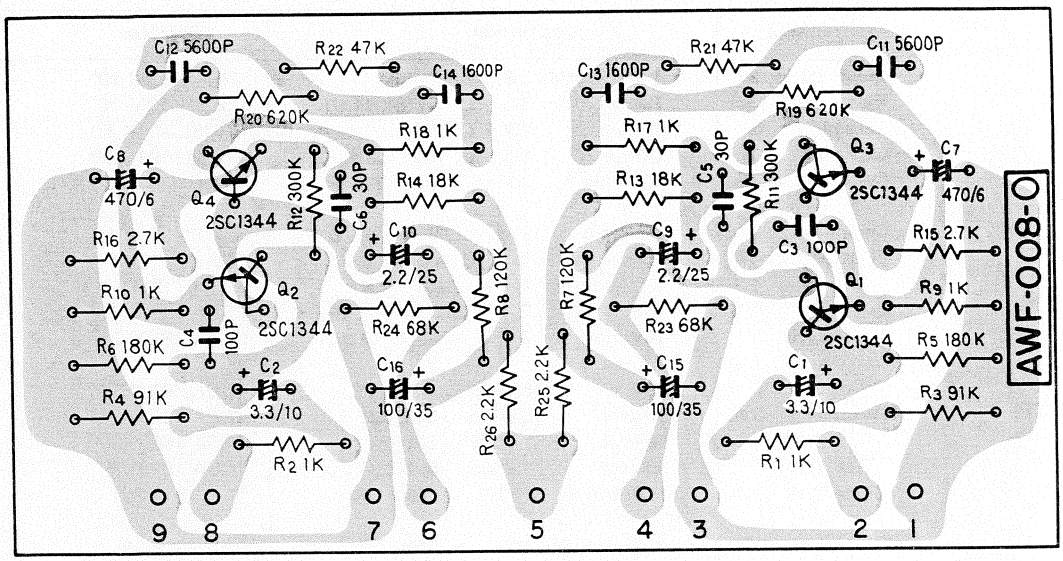
OTHERS

Symbol	Description	Part No.	
	Fuse 1A (AC power, protection)	E21-033-0	KU model
	Fuse 0.5A (AC power, protection)	AEK-016-0	FV model
	Fuse 0.5A (protection)	E21-028-0	KU model
	Compound part for REC jack	AWW-004-0	
	Operating instructions	ARB-076-0	
	Polyshing cloth	E33-009-B	
	Fuse 1A (AC power)	E21-034-A	FV model
	Cord with pin plug	ADE-005-0	
	Packingcase	AHD-163-0	KU model
	Packing case	AHD-162-0	FV model
	Packing case	AHD-179-0	KC model
	Side pad	AHA-031-0	
	Soft sheet-C	H12-113-0	
	Vinyl bag	AHG-009-0	

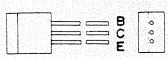
13.2 EQUALIZER AMPLIFIER ASSEMBLY (AWF-008-0)



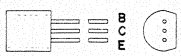
FOIL SIDE



2SC1344



2SC1312



EQUALIZER AMPLIFIER ASSEMBLY

Parts List of Equalizer Amplifier Assembly (AWF-008-0)

CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	3.3	10V	CSZA 3R3M 10	
C2	Electrolytic	3.3	10V	CSZA 3R3M 10	
C3	Ceramic	100p	50V	CCDSL 101K 50	
C4	Ceramic	100p	50V	CCDSL 101K 50	
C5	Ceramic	30p	50V	CCDSL 300K 50	
C6	Ceramic	30p	50V	CCDSL 300K 50	
C7	Electrolytic	470	6V	CEA 471P 6	
C8	Electrolytic	470	6V	CEA 471P 6	
C9	Electrolytic	2.2	25V	CSZA 2R2M 25	
C10	Electrolytic	2.2	25V	CSZA 2R2M 25	
C11	Styrol	5,600p	50V	CQSA 562J 50	
C12	Styrol	5,600p	50V	CQSA 562J 50	
C13	Styrol	1,600p	50V	CQSA 162J 50	
C14	Styrol	1,600p	50V	CQSA 162J 50	
C15	Electrolytic	100	35V	CEA 101P 35	
C16	Electrolytic	100	35V	CEA 101P 35	

RESISTORS

Symbol	Description		Part No.	
R1	Carbon film	1k	RD¼PM 102J	
R2	Carbon film	1k	RD¼PM 102J	
R3	Carbon film	91k	RD¼PM 913J	
R4	Carbon film	91k	RD¼PM 913J	
R5	Carbon film	180k	RD¼PM 184J	
R6	Carbon film	180k	RD¼PM 184J	
R7	Carbon film	120k	RD¼PM 124J	
R8	Carbon film	120k	RD¼PM 124J	
R9	Carbon film	1k	RD¼PM 102J	
R10	Carbon film	1k	RD¼PM 102J	
R11	Carbon film	300k	RD¼PM 304J	
R12	Carbon film	300k	RD¼PM 304J	
R13	Carbon film	18k	RD¼PM 183J	
R14	Carbon film	18k	RD¼PM 183J	
R15	Carbon film	2.7k	RD¼PM 272J	
R16	Carbon film	2.7k	RD¼PM 272J	
R17	Carbon film	1k	RD¼PM 102J	
R18	Carbon film	1k	RD¼PM 102J	
R19	Carbon film	680k	RD¼PM 684J	
R20	Carbon film	680k	RD¼PM 684J	
R21	Carbon film	47k	RD¼PM 473J	
R22	Carbon film	47k	RD¼PM 473J	
R23	Carbon film	68k	RD¼PM 683J	
R24	Carbon film	68k	RD¼PM 683J	
R25	Carbon film	2.2k	RD¼PM 222J	
R26	Carbon film	2.2k	RD¼PM 222J	

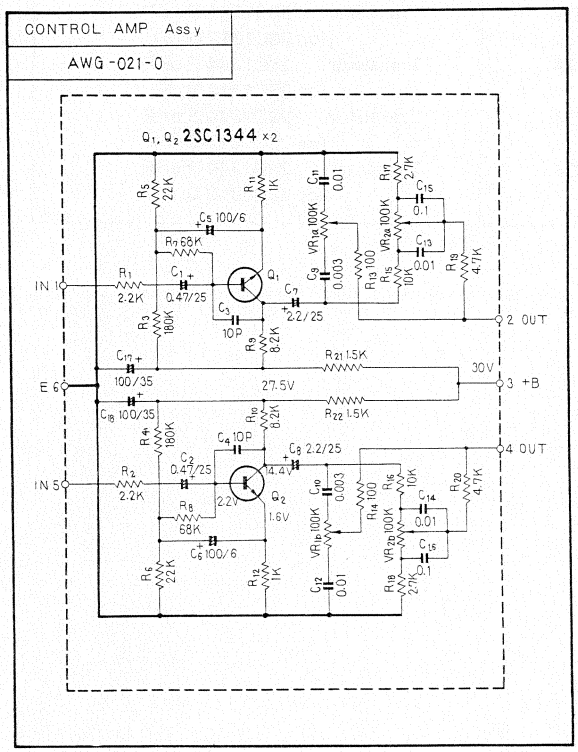
EQUALIZER AMPLIFIER ASSEMBLY

SEMICONDUCTORS

Symbol	Description	Part No.	
Q1	Transistor 2SC1344-E or F (or 2SC1312-G, F)		
Q2	Transistor 2SC1344-E or F (or 2SC1312-G, F)		
Q3	Transistor 2SC1344-E or F (or 2SC1312-G, F)		
Q4	Transistor 2SC1344-E or F (or 2SC1312-G, F)		

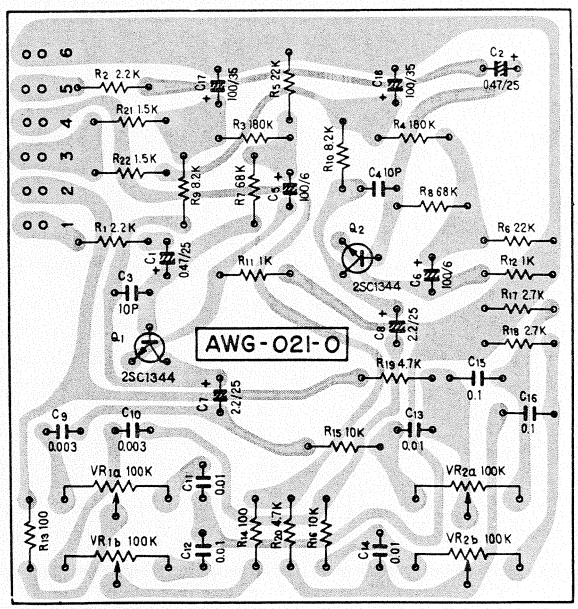
EQUALIZER AMPLIFIER ASSEMBLY

13.3 CONTROL AMPLIFIER ASSEMBLY (AWG-021-0)



2SC1344

FOIL SIDE



Parts List of Control Amplifier Assembly (AWG-021-0)

CAPACITORS

Symbol	Description		Part No.	
C1	Electrolytic	0.47 25V	CSSA R47M 25	
C2	Electrolytic	0.47 25V	CSSA R47M 25	
C3	Ceramic	10p 50V	CCDSL 100K 50	
C4	Ceramic	10p 50V	CCDSL 100K 50	
C5	Electrolytic	100 6V	CEA 101P 6	
C6	Electrolytic	100 6V	CEA 101P 6	
C7	Electrolytic	2.2 25V	CSSA 2R2M 25	
C8	Electrolytic	2.2 25V	CSSA 2R2M 25	
C9	Mylar	0.003 50V	CQMA 302J 50	
C10	Mylar	0.003 50V	CQMA 302J 50	
C11	Mylar	0.01 50V	CQMA 103J 50	
C12	Mylar	0.01 50V	CQMA 103J 50	
C13	Mylar	0.01 50V	CQMA 103J 50	
C14	Mylar	0.01 50V	CQMA 103J 50	
C15	Mylar	0.1 50V	CQMA 104J 50	
C16	Mylar	0.1 50V	CQMA 104J 50	
C17	Electrolytic	100 35V	CEA 101P 35	
C18	Electrolytic	100 35V	CEA 101P 35	

RESISTORS

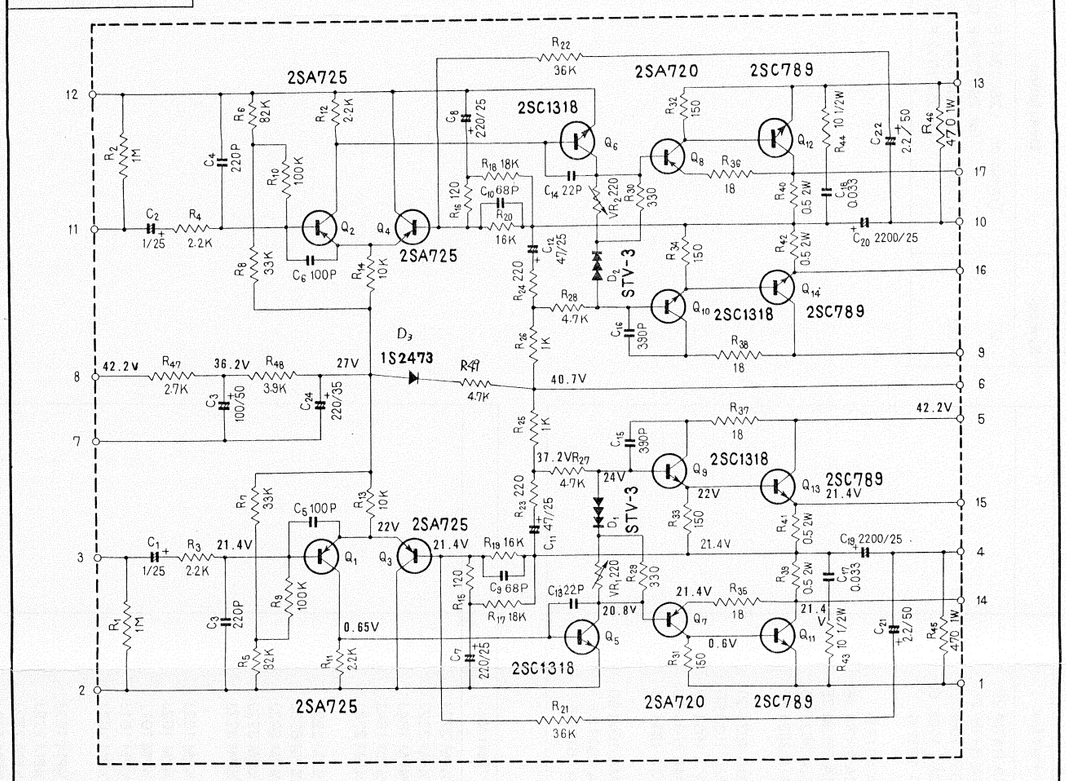
Symbol	Description		Part No.	
R1	Carbon film	2.2k	RD¼PM 222J	
R2	Carbon film	2.2k	RD¼PM 222J	
R3	Carbon film	180k	RD¼PM 184J	
R4	Carbon film	180k	RD¼PM 184J	
R5	Carbon film	22k	RD¼PM 223J	
R6	Carbon film	22k	RD¼PM 223J	
R7	Carbon film	68k	RD¼PM 683J	
R8	Carbon film	68k	RD¼PM 683J	
R9	Carbon film	8.2k	RD¼PM 822J	
R10	Carbon film	8.2k	RD¼PM 822J	
R11	Carbon film	1k	RD¼PM 102J	
R12	Carbon film	1k	RD¼PM 102J	
R13	Carbon film	100	RD¼PM 101J	
R14	Carbon film	100	RD¼PM 101J	
R15	Carbon film	10k	RD¼PM 103J	
R16	Carbon film	10k	RD¼PM 103J	
R17	Carbon film	2.7k	RD¼PM 272J	
R18	Carbon film	2.7k	RD¼PM 272J	
R19	Carbon film	4.7k	RD¼PM 472J	
R20	Carbon film	4.7k	RD¼PM 472J	
R21	Carbon film	1.5k	RD¼PM 152J	
R22	Carbon film	1.5k	RD¼PM 152J	
VR1	Potentiometer, dual	(100k-A2)	ACV-118-0	
VR2	Potentiometer, dual	(100k-A2)	ACV-118-0	

SEMICONDUCTORS

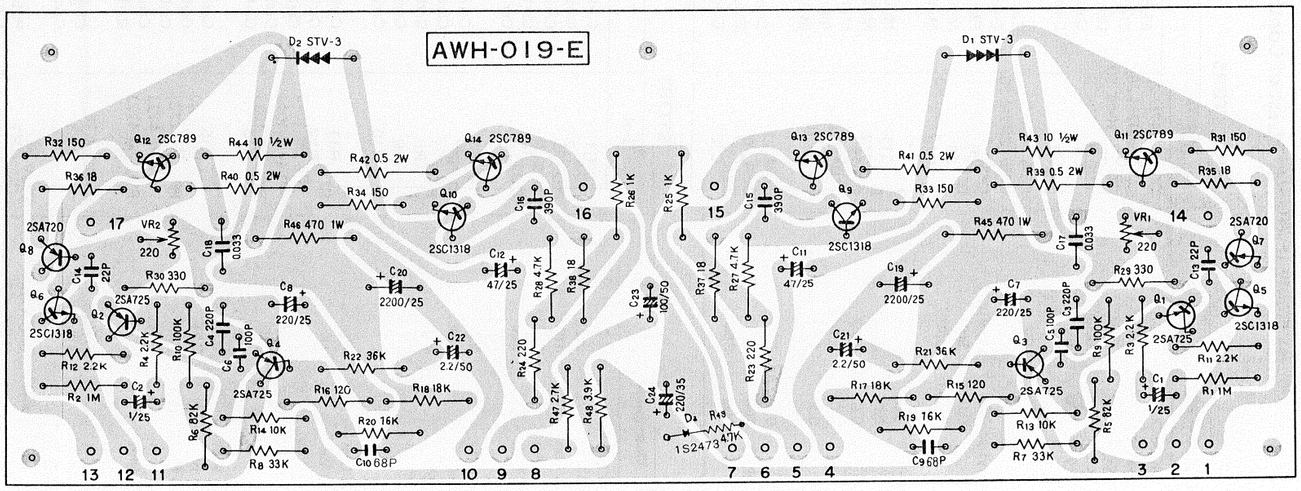
Symbol	Description	Part No.	
Q1	Transistor 2SC1344-F or E (or 2SC1312-F, G)		
Q2	Transistor 2SC1344-F or E (or 2SC1312-F, G)		

POWER AMP ASS'Y

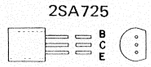
AWH-019-E



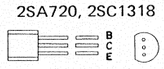
FOIL SIDE



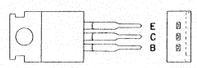
2SA725



2SA720, 2SC1318



2SC789



POWER AMPLIFIER ASSEMBLY

Parts List of Power Amplifier Assembly (AWH-019-E)

CAPACITORS

Symbol	Description			Part No.	
C1	Electrolytic	1	25V	CSSA 010X 25	
C2	Electrolytic	1	25V	CSSA 010X 25	
C3	Ceramic	220p	50V	CCDSL 221K 50	
C4	Ceramic	220p	50V	CCDSL 221K 50	
C5	Ceramic	100p	50V	CCDSL 101K 50	
C6	Ceramic	100p	50V	CCDSL 101K 50	
C7	Electrolytic	220	25V	CEA 221P 25	
C8	Electrolytic	220	25V	CEA 221P 25	
C9	Ceramic	12p	50V	CCDSL 120K 50	
C10	Ceramic	12p	50V	CCDSL 120K 50	
C11	Electrolytic	47	25V	CEA 470P 25	
C12	Electrolytic	47	25V	CEA 470P 25	
C13	Ceramic	22p	50V	CCDSL 220K 50	
C14	Ceramic	22p	50V	CCDSL 220K 50	
C15	Ceramic	390p	50V	CKDYB 391K 50	
C16	Ceramic	390p	50V	CKDYB 391K 50	
C17	Mylar	0.033	50V	CQMA 333K 50	
C18	Mylar	0.033	50V	CQMA 333K 50	
C19	Electrolytic	2,200	25V	CEA 222P 25	
C20	Electrolytic	2,200	25V	CEA 222P 25	
C21	Electrolytic	2.2	50V	CEA 2R2P 50	
C22	Electrolytic	2.2	50V	CEA 2R2P 50	
C23	Electrolytic	100	50V	CEA 101P 50	
C24	Electrolytic	220	35V	CEA 221P 35	

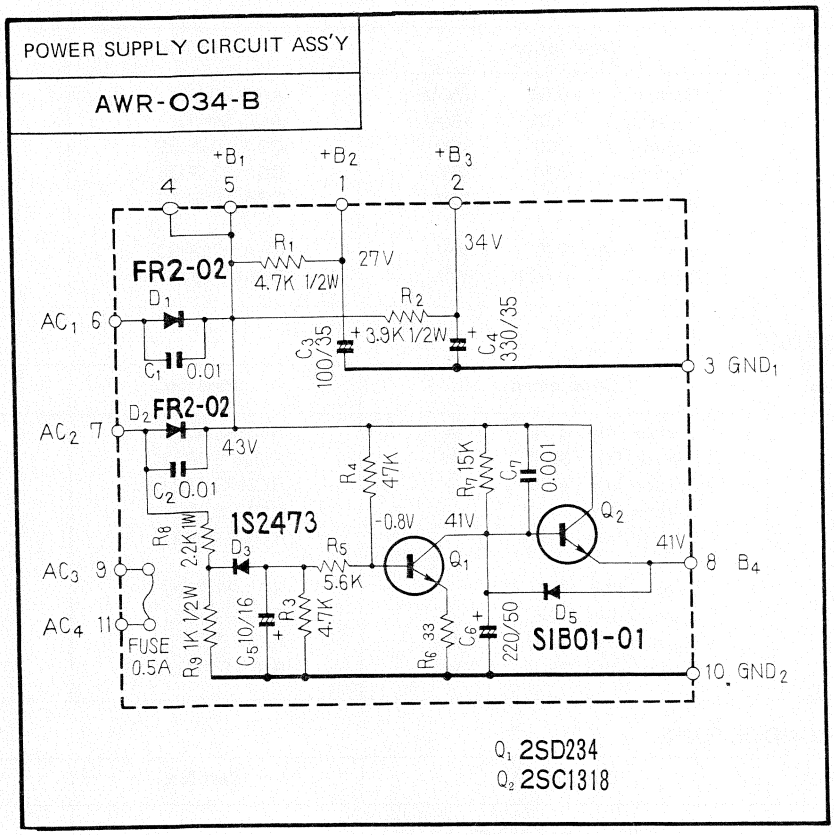
SEMICONDUCTORS

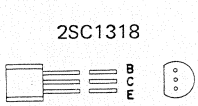
Symbol	Description		Part No.	
Q1	Transistor	2SA725-FW or F, G		
Q2	Transistor	2SA725-FW or F, G		
Q3	Transistor	2SA725-FW or F, G		
Q4	Transistor	2SA725-FW or F, G		
Q5	Transistor	2SC1318-R or Q		
Q6	Transistor	2SC1318-R or Q		
Q7	Transistor	2SA720-R or Q		
Q8	Transistor	2SA720-R or Q		
Q9	Transistor	2SC1318-R or Q		
Q10	Transistor	2SC1318-R or Q		
Q11	Transistor	2SC789-R or 0		
Q12	Transistor	2SC789-R or 0		
Q13	Transistor	2SC789-R or 0		
Q14	Transistor	2SC789-R or 0		
D1	Varistor	STV-3-G		
D2	Varistor	STV-3-G		
D3	Diode	1S2473		

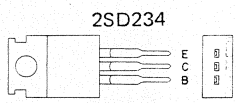
RESISTORS

Symbol	Description			Part No.	
R1	Carbon film	1M		RD¼PS 105J	
R2	Carbon film	1M		RD¼PS 105J	
R3	Carbon film	2.2k		RD¼PS 222J	
R4	Carbon film	2.2k		RD¼PS 222J	
R5	Carbon film	82k		RD¼PS 823J	
R6	Carbon film	82k		RD¼PS 823J	
R7	Carbon film	33k		RD¼PS 333J	
R8	Carbon film	33k		RD¼PS 333J	
R9	Carbon film	100k		RD¼PS 104J	
R10	Carbon film	100k		RD¼PS 104J	
R11	Carbon film	2.2k		RD¼PS 222J	
R12	Carbon film	2.2k		RD¼PS 222J	
R13	Carbon film	10k		RD¼PS 103J	
R14	Carbon film	10k		RD¼PS 103J	
R15	Carbon film	120		RD¼PS 121J	
R16	Carbon film	120		RD¼PS 121J	
R17	Carbon film	18k		RD¼PS 183J	
R18	Carbon film	18k		RD¼PS 183J	
R19	Carbon film	16k		RD¼PS 163J	
R20	Carbon film	16k		RD¼PS 163J	
R21	Carbon film	36k		RD¼PS 363J	
R22	Carbon film	36k		RD¼PS 363J	
R23	Carbon film	220		RD¼PS 221J	
R24	Carbon film	220		RD¼PS 221J	
R25	Carbon film	1k		RD¼PS 102J	
R26	Carbon film	1k		RD¼PS 102J	
R27	Carbon film	4.7k		RD¼PS 472J	
R28	Carbon film	4.7k		RD¼PS 472J	
R29	Carbon film	330		RD¼PS 331J	
R30	Carbon film	330		RD¼PS 331J	
R31	Carbon film	150		RD¼PS 151J	
R32	Carbon film	150		RD¼PS 151J	
R33	Carbon film	150		RD¼PS 151J	
R34	Carbon film	150		RD¼PS 151J	
R35	Carbon film	18		RD¼PS 180J	
R36	Carbon film	18		RD¼PS 180J	
R37	Carbon film	18		RD¼PS 180J	
R38	Carbon film	18		RD¼PS 180J	
R39	Metal film	0.5	2W	RN2H 0R5K	
R40	Metal film	0.5	2W	RN2H 0R5K	
R41	Metal film	0.5	2W	RN2H 0R5K	
R42	Metal film	0.5	2W	RN2H 0R5K	
R43	Carbon film	10	½W	RD½PS 100J	
R44	Carbon film	10	½W	RD½PS 100J	
R45	Metal oxide	470	1W	RS1P 471K	
R46	Metal oxide	470	1W	RS1P 471K	
R47	Carbon film	2.7k		RD¼PS 272J	
R48	Carbon film	3.9k		RD¼PS 392J	
R49	Carbon film	4.7k		RD¼PS 472J	
VR1	Semi-fixed	(220-B)		C92-060-0	
VR2	Semi-fixed	(220-B)		C92-060-0	

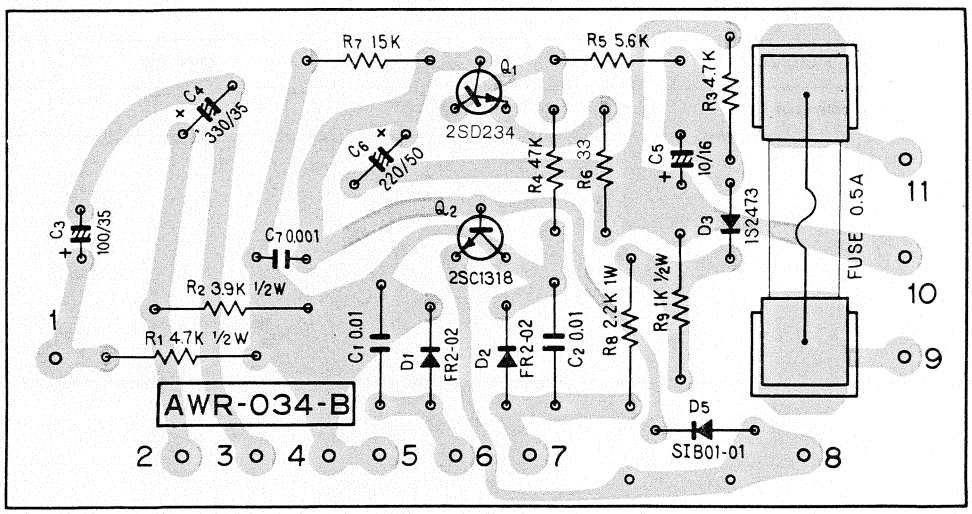
13.5 POWER SUPPLY CIRCUIT ASSEMBLY (AWR-034-B)







FOIL SIDE



Parts List of Power Supply Circuit Assembly (AWR-034-B)

CAPACITORS

Symbol	Description			Part No.	
C1	Ceramic	0.01	150V	ACG-004-0	
C2	Ceramic	0.01	150V	ACG-004-0	
C3	Ceramic	100	35V	CEA 101P 35	
C4	Ceramic	330	35V	CEA 331P 35	
C5	Ceramic	10	16V	CEA 100P 16	
C6	Electrolytic	220	50V	CEA 221P 50	
C7	Mylar	0.001	50V	CQMA 102M 50	

RESISTORS

Symbol	Description			Part No.	
R1	Carbon film	4.7k	½W	RD½PS 472J	
R2	Carbon film	3.9k	½W	RD½PS 392J	
R3	Carbon film	4.7k		RD¼PS 472J	
R4	Carbon film	47k		RD¼PS 473J	
R5	Carbon film	5.6k		RD¼PS 562J	
R6	Carbon film	33		RD¼PS 330J	
R7	Carbon film	15k		RD¼PS 153J	
R8	Metal oxide	2.2k	1W	RS1P 222J	
R9	Carbon film	1k	½W	RS½PS 102J	

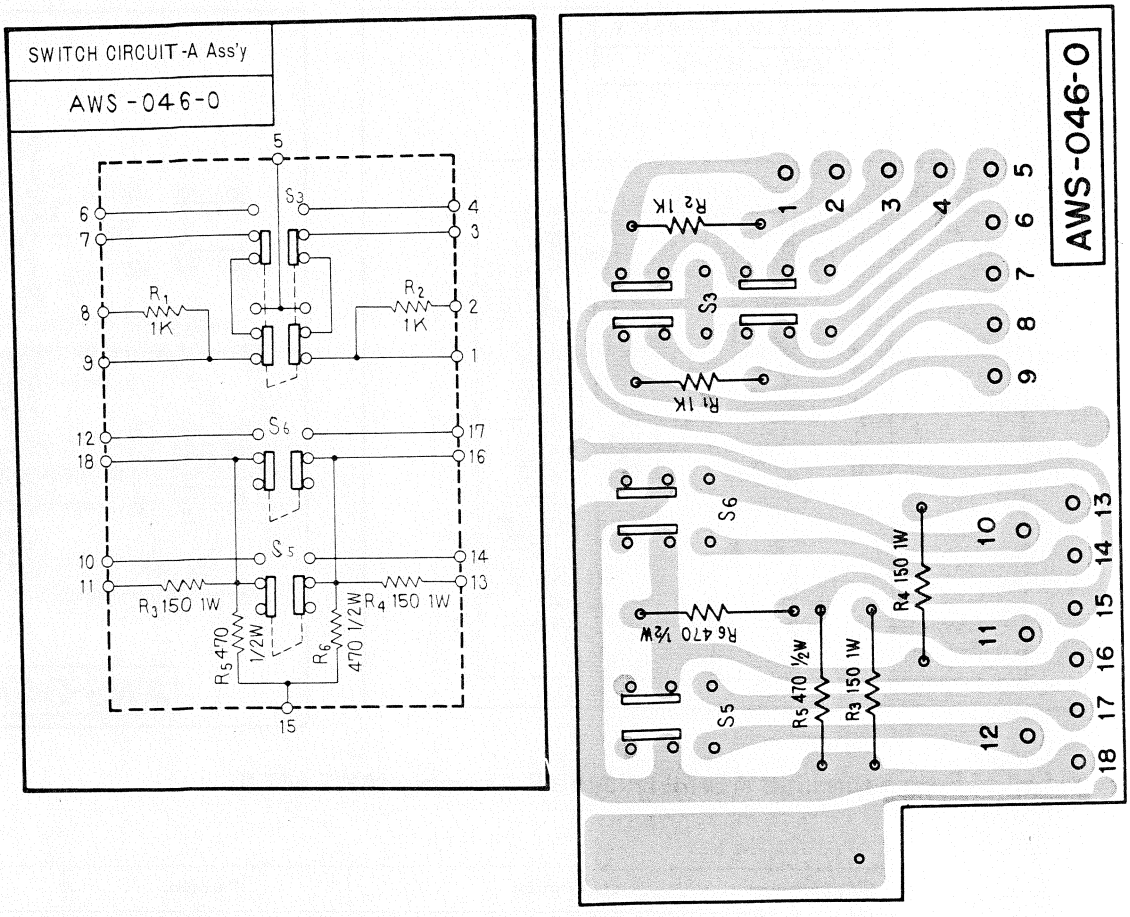
SEMICONDUCTORS

Symbol	Description		Part No.	
Q1	Transistor	2SD234 or 2SC1061		
Q2	Transistor	2SC1318-R or Q		
D1	Diode	FR2-02		
D2	Diode	FR2-02		
D3	Diode	1S2473		
D5	Diode	SIB01-01		

OTHER

Symbol	Description	Part No.	
	Protection fuse holder	K91-006-0	

13.6 SWITCH CIRCUIT-A ASSEMBLY (AWS-046-0)



Parts List of Switch Circuit-A Assembly (AWS-046-0)

RESISTORS

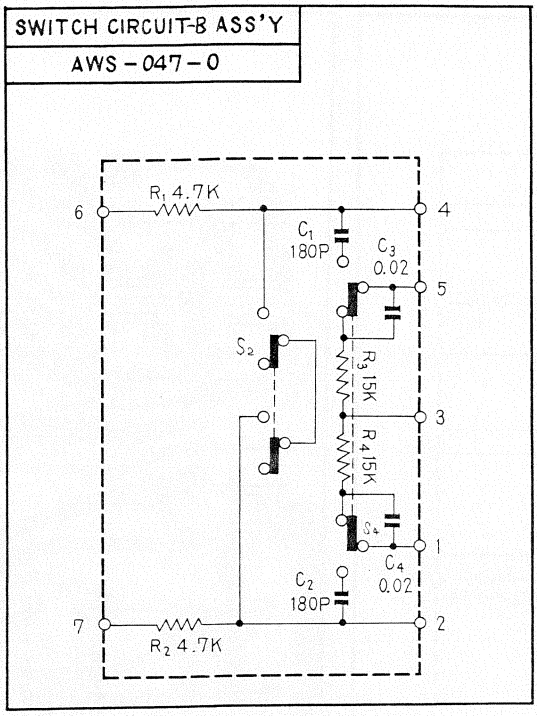
Symbol	Description	Part No.	
R1	Carbon film 1k	RD¼PS 102J	
R2	Carbon film 1k	RD¼PS 102J	
R3	Metal oxide 150 1W	RS1P 151J	
R4	Metal oxide 150 1W	RS1P 151J	
R5	Carbon film 470 ½W	RD½PS 471J	
R6	Carbon film 470 ½W	RD½PS 471J	

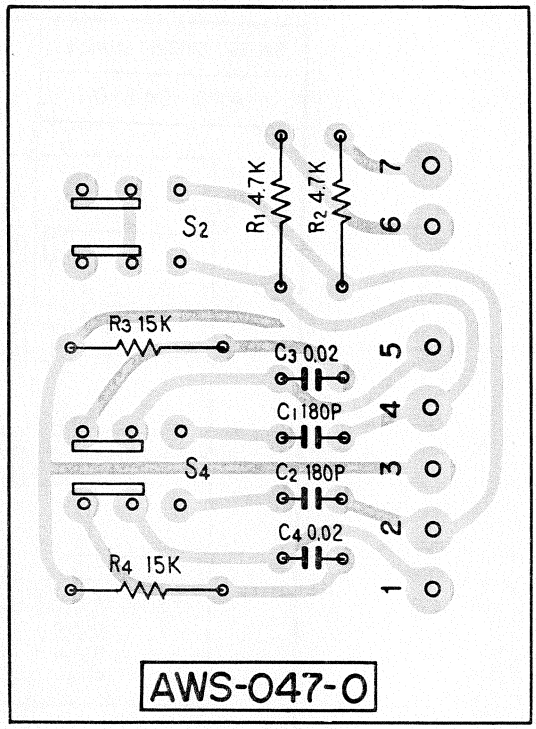
SWITCH

Symbol	Description	Part No.	
	Push switch	ASG-041-0	

13.7 SWITCH CIRCUIT-B ASSEMBLY (AWS-047-0)

FOIL SIDE





Parts List of Switch Circuit-B Assembly (AWS-047-0)

CAPACITORS

Symbol	Description			Part No.	
C1	Ceramic	180p	50V	CCDSL 181K 50	
C2	Ceramic	180p	50V	CCDSL 181K 50	
C3	Mylar	0.02	50V	COMA 203K 50	
C4	Mylar	0.02	50V	COMA 203K 50	

RESISTORS

Symbol	Description	Part No.	
R1	Carbon film 4.7k	RD¼PS 472J	
R2	Carbon film 4.7k	RD¼PS 472J	
R3	Carbon film 15k	RD¼PS 153J	
R4	Carbon film 15k	RD¼PS 153J	

SWITCH

Symbol	Description	Part No.	
	Push switch	ASG-032-0	